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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/884,796	06/19/2001	Zine-Eddine Boutaghou	169.12-0496	4390

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EXAMINER

LE, MINH

ART UNIT

PAPER NUMBER

2652

DATE MAILED: 01/02/2003

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

09/884,796

Applicant(s)

BOUTAGHOU ET AL.

Examiner

Minh Le

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☐ Responsive to communication(s) filed on ____.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-14 is/are pending in the application.
- 4a) Of the above claim(s) ____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) ____ is/are allowed.
- 6) ☒ Claim(s) 1-14 is/are rejected.
- 7) ☒ Claim(s) 3, 4, 5, 13 and 14 is/are objected to.
- 8) ☐ Claim(s) ____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on ____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
- Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- 11) ☐ The proposed drawing correction filed on ____ is: a) ☐ approved b) ☐ disapproved by the Examiner.
- If approved, corrected drawings are required in reply to this Office action.
- 12) ☐ The oath or declaration is objected to by the Examiner.

Priority under 35 U.S.C. §§ 119 and 120

- 13) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. ____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- * See the attached detailed Office action for a list of the certified copies not received.
- 14) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application).
- a) ☐ The translation of the foreign language provisional application has been received.
- 15) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121.

Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☒ Information Disclosure Statement(s) (PTO-1449) Paper No(s) 1.
- 4) ☐ Interview Summary (PTO-413) Paper No(s). ____.
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other: _____.

DETAILED ACTION

Claim Objections

1. Claim 3 objected to because of the following informalities: “*The slider of claim 2, where an interface of the first material and the second material comprises a latitudinal plane substantially perpendicular to the air bearing surface*” (Page 2, lines 3-4 in Preliminary amendment) should change to “*The slider of claim 2, wherein an interface of the first material and the second material comprises a latitudinal plane substantially perpendicular to the air bearing surface*”.

Appropriate correction is required.

2. Claim 5 objected to because of the following informalities: “*The slider of claim 4 wherein*” (Page 2, lines 7-8 in Preliminary amendment) should change to “*The slider of claim 3 wherein*”.

Appropriate correction is required.

Claim Rejections - 35 USC § 112

3. The following is a quotation of the first paragraph of 35 U.S.C. 112:

The specification shall contain a written description of the invention, and of the manner and process of making and using it, in such full, clear, concise, and exact terms as to enable any person skilled in the art to which it pertains, or with which it is most nearly connected, to make and use the same and shall set forth the best mode contemplated by the inventor of carrying out his invention.

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4. Claims 4, 5, 13 and 14 rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

Claims 4 and 13 is indefinite because the term "as much as about" was held to be indefinite because the specification lacked some standard for measuring the degree intended and, therefore, properly rejected as indefinite under 112(2). Ex parte Oetiker, 23 USPQ 2d 641 (Bd. PA&I, 1992).

Claims 5 and 14 is indefinite because the term "as little as about" was held to be indefinite because the specification lacked some standard for measuring the degree intended and, therefore, properly rejected as indefinite under 112(2). Ex parte Oetiker, 23 USPQ 2d 641 (Bd. PA&I, 1992).

Claim Rejections - 35 USC § 102

5. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

6. Claims 1, 2 and 3 rejected under 35 U.S.C. 102(b) as being anticipated by Harada et al. (U.S. Patent No. 5,276,573).

As per claim 1, Harada shows in Fig. 3 an air bearing slider comprising a transducer 4 for communicating with the disc, means 3 for supporting the transducer so that the transducer is a closest position with respect to the disc during flight (See col. 7, lines 34-53).

As per claim 2, Harada shows in Fig. 6 a slider of claim 1, wherein the means 3 for supporting the transducer including a composite slider body with a front portion 9 composed of a first material (It is noted that the substrate portion 3 is made of **ceramic**, See col. 8, lines 17-25), and a rear portion composed of a second material (It is noted that the substrate portion 20 being made of **silicon** has a substantially recessed portion at a rear portion, See col. 7, lines 34-38 and col. 7, lines 60-66), the slider body having an air bearing surface defined on a disc opposing face of the slider body (See Fig. 1-3), wherein the air bearing surface comprises the front portion and the rear portion, and a transducer basecoat portion attached to the rear portion of the slider body and containing the transducer (See Fig. 3 and col. 7, lines 34-53).

As per claim 3, Harada shows in Fig. 3 the slider of claim 2, wherein an interface of the first material 21 and the second material 3 comprises a latitude plane substantially perpendicular to the air-bearing surface.

Claim Rejections - 35 USC § 103

7. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

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8. Claims 4, 5 and 6 rejected under 35 U.S.C. 103(a) as being unpatentable over Harada in view of Chang et al. (U.S. Patent No. 6,385,011).

As per claim 4, Harada does not expressly disclose the slider of claim 3 wherein the thickness of the first material is approximately 15 times of the thickness of the second material.

Chang discloses a slider in Fig. 3, wherein the thickness of the first material 204 is from 50 nm to 1,000 nm (See col. 6, lines 1-19) and the thickness of the second material 104 is from 10 nm to 200 nm (See col. 4, lines 15-31). Thereby, it could choose the thickness d and d' of the first and second material respectively, such as to $d = 15 d'$ (Example: $d = 150$ nm and $d' = 10$ nm).

It would have been obvious to a person having ordinary skill in the art at the time the invention was made to provide a slider, wherein the thickness of the first material is approximately 15 times of the thickness of the second material, as taught by Chang. The rationale is as follows: one of ordinary skill in the art at the time the invention was made would have been motivated to provide a slider, wherein the thickness of the first material is approximately 15 times of the thickness of the second material, in order to make "a slider having improved positive crown and camber", as taught by Chang (col. 2, lines 29-30).

As per claim 5, Harada does not expressly disclose the slider of claim 3 wherein the thickness of the first material is approximately half of the thickness of the second material.

Chang discloses a slider in Fig. 3, wherein the thickness of the first material 204 is from 50 nm to 1,000 nm (See col. 6, lines 1-19) and the thickness of the second material 104 is from 10 nm to 200 nm (See col. 4, lines 15-31). Thereby, it could choose the thickness d and d' of the

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first and second material respectively, such as to $d = 1/2 d'$ (Example: $d = 100$ nm and $d' = 200$ nm).

It would have been obvious to a person having ordinary skill in the art at the time the invention was made to provide a slider, wherein the thickness of the first material is approximately half of the thickness of the second material, as taught by Chang. The rationale is as follows: one of ordinary skill in the art at the time the invention was made would have been motivated to provide a slider, wherein the thickness of the first material is approximately half of the thickness of the second material, in order to produce a slider “utilizing existing manufacturing steps with the addition of a thin film deposition step”, as taught by Chang (col. 2, lines 31-34).

As per claim 6, Harada does not expressly disclose the slider of claim 3 wherein the transducer portion comprises the second material.

Chang discloses a slider in Fig. 4, wherein the transducer portion 86 comprises the second material 138.

It would have been obvious to a person having ordinary skill in the art at the time the invention was made to provide a slider, wherein the transducer portion comprises the second material, as taught by Chang. The rationale is as follows: one of ordinary skill in the art at the time the invention was made would have been motivated to provide a slider, wherein the transducer portion comprises the second material, in order to make an improved slider being “produced with minimal increased cost and complexity to the slider manufacturing process”, as taught by Chang (col. 2, lines 35-38).

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9. Claim 7, rejected under 35 U.S.C. 103(a) as being unpatentable over Harada and Chang as applied to claim 6 above, and further in view of Tabuchi (U.S. Patent No. 5,764,832).

Harada and Chang do not expressly disclose the slider of claim 6, wherein a lapping durability of the first material is greater than a lapping durability of the second material.

Tabuchi discloses in Fig. 22 a lapping durability of the first material is greater than a lapping durability of the second material (See col. 16, lines 19-31).

It would have been obvious to a person having ordinary skill in the art at the time the invention was made to provide a slider, wherein a lapping durability of the first material is greater than a lapping durability of the second material, as taught by Tabuchi. The rationale is as follows: one of ordinary skill in the art at the time the invention was made would have been motivated to provide a slider, wherein a lapping durability of the first material is greater than a lapping durability of the second material, in order to provide "a method of manufacturing an integrated semiconductor optical device having a process of laminating a layer of an optical component", as taught by Tabuchi (col. 6, lines 40-42).

10. Claim 8, rejected under 35 U.S.C. 103(a) as being unpatentable over Harada and Chang as applied to claim 6 above, and further in view of Tokuyama et al. (U.S. Patent No. 5,886,856).

Harada and Chang do not expressly disclose the slider of claim 6, wherein the first material is AlTiC and the second material is Al₂O₃.

Tokuyama discloses a slider wherein the substrate is made of AlTiC or Al₂O₃ (See col. 16, lines 49, 60 and col. 16, lines 2, 14).

It would have been obvious to a person having ordinary skill in the art at the time the invention was made to provide a slider, wherein the first material is AlTiC and the second material is Al₂O₃, as taught by Tokuyama. The rationale is as follows: one of ordinary skill in the art at the time the invention was made would have been motivated to provide a slider, wherein the first material is AlTiC and the second material is Al₂O₃, in order to “provide a magnetic head slider assembly of a novel and improved structure having only a projecting portion which incorporates therein cores of a magnetic head formed in a thin film of a main body of the slider as well as a method of manufacturing the magnetic head slider assembly”, as taught by Tokuyama (col. 3, lines 5-10).

11. Claim 9, 10, 11 and 12 rejected under 35 U.S.C. 103(a) as being unpatentable over Harada in view of Tabuchi (U.S. Patent No. 5,764,832).

As per claim 9 Harada discloses a method of manufacturing a slider body which supports a transducer so that the transducer is at closest position with respect to a disc during flight, the method comprising the steps of: forming a composite wafer comprising a plurality of joined slider bodies (See Fig. 13a), forming on a layer of second material a transducer basecoat portion containing a plurality of transducer, wherein at least one transducer resides on each of the slider bodies (See Fig. 14b), defining an air bearing surface on each slider body, the air bearing surface comprising a leading portion of the first material and a trailing portion of the second material (See Fig. 15).

As to claims 11, 12 Harada discloses a method of claim 9 further comprising severing the composite wafer into a plurality of bars, and severing a bar into a plurality of individual sliders (See Fig. 14a-c).

As to claim 9, 10 Harada does not expressly disclose the method of manufacturing a slider body including a step of forming a composite wafer comprising a layer of a first material and a layer of a second material, wherein a lapping durability of the first material is greater than a lapping durability of the second material.

Tabuchi discloses in Fig. 22 a method of manufacturing a slider body including the step of forming a composite wafer comprising a layer of a first material and a layer of a second material, wherein a lapping durability of the first material is greater than a lapping durability of the second material.

It would have been obvious to a person having ordinary skill in the art at the time the invention was made to provide a method of manufacturing a slider body including the step of forming a composite wafer comprising a layer of a first material and a layer of a second material, wherein a lapping durability of the first material is greater than a lapping durability of the second material, as taught by Tabuchi. The rationale is as follows: one of ordinary skill in the art at the time the invention was made would have been motivated to provide a method of manufacturing a slider body including the step of forming a composite wafer comprising a layer of a first material and a layer of a second material, wherein a lapping durability of the first material is greater than a lapping durability of the second material, in order to provide "a method of manufacturing an integrated semiconductor optical device having a process of laminating a layer of an optical component", as taught by Tabuchi (col. 6, lines 40-42).

12. Claim 13, 14 rejected under 35 U.S.C. 103(a) as being unpatentable over Harada and Tabuchi as applied to claim 9 above, and further in view of Chang et al. (U.S. Patent No. 6,385,011).

As per claim 13, Harada and Tabuchi do not expressly disclose a method of claim 9, wherein the thickness of the first material is approximately 15 times of the thickness of the second material.

Chang discloses in Fig. 3 a slider, wherein the first material 204 having the thickness of from 50 nm to 1,000 nm (See col. 6, lines 1-19) and the second material 104 having the thickness of from 10 nm to 200 nm (See col. 4, lines 15-31). Thereby, it could choose the thickness d and d' of the first and second material respectively, such as to $d = 15 d'$ (Example: $d = 150$ nm and $d' = 10$ nm).

It would have been obvious to a person having ordinary skill in the art at the time the invention was made to provide a method of manufacturing a slider body, wherein the thickness of the first material is approximately 15 times of the thickness of the second material, as taught by Chang. The rationale is as follows: one of ordinary skill in the art at the time the invention was made would have been motivated to provide a method of manufacturing a slider body, wherein the thickness of the first material is approximately 15 times of the thickness of the second material, in order to produce a slider "utilizing existing manufacturing steps with the addition of a thin film deposition step", as taught by Chang (col. 2, lines 31-34).

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As per claim 14, Harada and Tabuchi do not expressly disclose a method of claim 9, wherein the thickness of the first material is approximately half of the thickness of the second material.

Chang discloses in Fig. 3 a slider, wherein the first material 204 having the thickness of from 50 nm to 1,000 nm (See col. 6, lines 1-19) and the second material 104 having the thickness of from 10 nm to 200 nm (See col. 4, lines 15-31). Thereby, it could choose the thickness d and d' of the first and second material respectively, such as to $d = 1/2 d'$ (Example: $d = 100$ nm and $d' = 200$ nm).

It would have been obvious to a person having ordinary skill in the art at the time the invention was made to provide a method of manufacturing a slider body, wherein the thickness of the first material is approximately half of the thickness of the second material, as taught by Chang. The rationale is as follows: one of ordinary skill in the art at the time the invention was made would have been motivated to provide a method of manufacturing a slider body, wherein the thickness of the first material is approximately half of the thickness of the second material, in order to make an improved slider being "produced with minimal increased cost and complexity to the slider manufacturing process", as taught by Chang (col. 2, lines 35-38).

Prior art cited

13. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure.

Beasom et al. (U.S. Patent No. 5,801,084) shows a method for preparing a plurality of bonded wafers for contacting with vacuum wafer chucks.

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Pan et al. (U.S. Patent No. 5,936,806) discloses the invention to control thermal sensitivity of flying head slider crowns, which occurs as the result of thermal expansion coefficient mismatch without producing alteration of bonding reliability in the slider suspension assembly.


Conclusion

14. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Minh Le whose telephone number is (703) 305-7867. The examiner can normally be reached on 10:00AM - 7:00PM (Mon- Fri).

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Hoa T Nguyen can be reached on (703) 305-9687. The fax phone numbers for the organization where this application or proceeding is assigned are (703) 305-3718 for regular communications and (703) 305-3718 for After Final communications.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is (703) 305-3900.

ML
December 16, 2002


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12/27/02